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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 09/741,917 | 12/20/2000 | Ronaldus Maria Aarts | PHN 17,834 | 9594 |

24737 7590 05/19/2004

PHILIPS INTELLECTUAL PROPERTY & STANDARDS
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| EXAMINER | |
|---|---|
| HARPER, V PAUL | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2654 | 15 |

DATE MAILED: 05/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. 09/741,917 | Applicant(s) AARTS ET AL. | |
|---|---|---|---|
| | Examiner V. Paul Harper | Art Unit 2654 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *15 April 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *2-6* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2-6* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 2-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masaharu et al. (Japanese Patent Application Publication JP 09114479A), hereinafter referred to as Masaharu, in view of Atsushi et al. (Japanese Patent JP 07056497A).

Regarding claim 2, Masaharu discloses a sound field reproducing device with the following features: **"input means for receiving combined speech and music signals on n input channels, n being an integer"** (English abstract, ¶0011 voice and non-voice signal acquisition); **"separating means for substantially separating the speech and music signals"** (English abstract, ¶0015 voice signal is extracted from inputted stereo); **"combination means for combining the modified speech signals and the music signals, and for outputting the combination modified speech and music signals on m output channels, m being an integer"** (English abstract, adding circuit **14**, and ¶0013, addition means mentioned in last sentence).

In addition, Masaharu discloses a field expansion means that can orientate an image using sound effects to arbitrary positions in space (¶0014), but Masaharu does not specifically teach that **"signal direction detection means for ascertaining a direction from which the speech signals; converter means for converting the speech signals in accordance with a desired virtual change in the direction from which the speech signals can be heard, said converter means forming modified speech signals."**

However, the examiner contends that this concept was well known in the art, as taught by Atsushi.

In the same field of endeavor, Atsushi discloses voice virtual location system that locates a voice inputted to a microphone (with position data) and then relocates the voice to a position in virtual space (with virtual data) (English abstract, ¶'s 0005-0007).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Masaharu by specifically providing signal direction means both inputted and virtual, as taught by Atsushi, to generate a more realistic voice representation (¶'s 0004-0005).

Regarding claim 3, Masaharu in view of Atsushi teaches everything claimed, as applied above (see claim 2). But Masaharu in view of Atsushi does not specifically teach **"the converter means comprises one or several additional input channels for receiving speech and position signals can be supplied from a microphone**

**having position recording means."** However, the examiner contends that this concept was well known in the art, as taught by Atsushi.

Atsushi further discloses that the system locates the voice inputted to the microphone (English abstract, ¶ 0006).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Masaharu in view of Atsushi by specifically providing signal direction means, as taught by Atsushi, to generate vocal positioning for a more realistic effect (¶'s 0005 and 0006).

Regarding claim 4, Masaharu in view of Atsushi teaches everything claimed, as applied above (see claim 2). In addition, Masaharu discloses **"sound reproduction means for reproducing amplified speech and music signals"** (English abstract, ¶0015, last sentence in particular where it states that the output signal is emitted as sound by two or more speakers with necessary output channels).

Regarding claim 5, Masaharu teaches everything claimed, as applied above (see claim 2). In addition, Masaharu discloses **"with a unit including a picture screen and sound reproduction means are incorporated"** (¶0002, sound system and big screen combined).

Regarding claim 6, Masaharu teaches everything claimed, as applied above (see claim 2). In addition, Masaharu discloses **"further converter means coupled to said**

**separation means for converting the music signals, in accordance with a desired virtual spatial widening, into widened music signals, said widened signals being combined with said modified speech signals in said combination means"**

(English abstract, reflection sounds are added to the outputted signals, and ¶0014, sound field expansion).

***Response to Arguments***

2. Applicant's arguments filed 4/15/04 have been fully considered but they are not persuasive.

3. Applicants assert on page 3:

> Applicants submit that the Examiner has not met criteria (1) to establish a prima facie case of obviousness. In particular, the Examiner states, in commenting on the applicability of Masaharu et al. to the invention as claimed in claim 2, "combination means for combining the modified speech signals and the music signals, and for outputting the combination modified speech and music signals on m output channels, m being an integer". However, in actuality, Masaharu et al. merely discloses devices for separating the voice components of the combined signal (voice signal eliminating circuit 12 and voice extracting circuit 13), processing the voiceless resultant signal, for example, for widening (sound field expanding circuit 15), and then re-inserting the voice components (adding circuit 16) such that the voice components are not subjected to the widening processing. *Masaharu et al. neither discloses nor suggests any form of processing of the separated voice components.* (Italics added)

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871

(CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In this case, Masaharu et al. teach the separation of the speech and music signals, and the subsequent processing of the music signals (English abstract, ¶0011); in addition, as stated in the rejection of claim 2, **Atsushi et al.** teach the processing of the speech signals to locate them in virtual space (English abstract, ¶'s 0005-0007).

4. Applicant's further assert beginning on the bottom of page 3:

> Hence, Applicants submit that there is no suggestion or motivation to modify Masaharu et al. to combine therewith the a teachings of Atsushi et al. Furthermore, Applicants submit that the only place such a suggestion could have come is the subject invention, which is indicative of impermissible hindsight.

The examiner maintains that the further processing of the speech signals is motivated by Atsushi et al. who state that such processing of a speech signal "raises the reality of a virtual space" (¶ 0005).

5. Applicants assert on page 4:

> Furthermore, Applicants believe that Atsushi et al. is not art analogous to that of Masaharu et al. In particular, Masaharu et al. relates to a device for reproducing a sound field having a range equal to or wider than that in the conventional practice without impairing the clarity of voice signals. This would be done in the case of music or television in order to enhance the listening experience. Atsushi et al., on the other hand, is concerned with the placement of voice sounds in a virtual field which would be used in, for example, a multiple player virtual reality game simulator. Applicants submit that one skilled in the art would not look to the virtual reality gaming field to further enhance the listening experience as disclosed in Masaharu et al.

In response to applicant's argument that Atsushi et al. is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, both Masaharu and Atsushi teach the processing of audio for entertainment related applications (see the Masaharu and Atsushi abstracts).

***Conclusion***

Any response to this office action should be mailed to:

Commissioner of Patents and Trademarks
P.O. Box 1450
Alexandria, VA 22313-1450

or faxed to:

(703) 872-9314

Hand-delivered responses should be brought to:

Crystal Park II
2121 Crystal Drive
Arlington, VA.
Sixth Floor (Receptionist)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. V. Paul Harper whose telephone number is (703) 305-4197. The examiner can normally be reached on Monday through Friday from 8:00 a.m. to 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil, can be reached on (703) 305-9645. The fax phone number for the Technology Center 2600 is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service office whose telephone number is (703) 306-0377.

VPH/vph
May 17, 2004

RICHEMOND DORVIL
SUPERVISORY PATENT EXAMINER